

**DEVICE AND SYSTEM FOR CALCULATING 3D SEISMIC CLASSIFICATION
FEATURES AND PROCESS FOR GEOPROSPECTING MATERIAL SEAMS****ABSTRACT OF THE INVENTION**

A device for calculating 3D seismic classification features constrained to be tangent to a path in a 3D volume is provided as a “geo-operator”. The method has the capability to associate horizontal (2D), vertical (2D) or arbitrary (3D) classification "feature vectors" with the geo-operator output, to allow determining where the geo-operator has sufficient data for the calculation to form a valid output and where the output of the geo-operator indicates a measure to which alternative feature vector prototypes may be present along the path. The geo-operator has the flexibility of using variable crossline, inline and vertical extent and having a direction able to be designated as it traverses the path, from the start point to the endpoint, aligned to be tangent to the path.